Corporate Finance and Income Distribution in a Growing Economy*

By Niklaus Blattner

How do corporate investment and financial decisions affect the distribution of factor incomes? This question is analysed within a Kaldorian framework, which allows the establishment of a link between the theory of the growth of the firm and the theory of macro growth and distribution.

1. Introduction

R. Marris recently investigated the properties of "A Tentative Micro-Macro Model of the Growth of the Firm and of the Economy"[1]. *Marris* attempted to link his own theory of the growth of the firm with a Kaldorian macro model in order to show how macro growth could possibly be explained as a result of the interaction of corporate management and private investors in the capital market.

What regards the distribution of factor incomes the *Marris* model is not specific. In the present paper we address ourselves to the solution of this problem. We, too, do this within a Kaldorian framework which has long been recognised as being especially suitable for the explicit discussion of the effects of an income generating and income distributing corporate sector[2].

We shall first build up a basic model and shall then proceed to discuss alternative solutions. The selection of a particular solution has important consequences for the determination of income distribution. Which of the solutions has to be preferred depends on the theory of the capital market adopted.

We hope that by stressing income distribution this time we are making a step towards the ultimate goal of a simultaneous explanation of growth and income distribution in a corporate economy.

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[1] *Marris* (1972), especially pp. 341 - 52.

[2] This is particularly true for *N. Kaldor* (1966). But see also *Bombach* (1959 a) and (1959 b).

2. Basic Model

We start in the usual way with the identities

$$Y \equiv W + P \tag{1}$$

and

$$P \equiv R + D \tag{2}$$

National income Y is equal to wages W plus profits P. Profits are earned by the corporate sector of the economy and split into retained earnings R and dividends D paid to the share owning workers.

There are two groups of persons: workers and corporate management. There are no capitalists — or, as *Kaldor* puts it more precisely: there are no hereditary capitalists[3]. Workers save and hence own the corporate sector. They also enjoy the dividends. Management is in charge of the operation of the corporations. Management is distinguished as a separate group of persons only insofar it regards its function of control. As earners of income managers are considered as part of the group of workers. Managers earn wages — or salaries — and they save. They own part of the corporate sector as workers do. Managers are different from workers insofar as they wield executive power while workers' influence is limited to the legislative part of the process.

Management has three instruments at its disposition of which only two are independent with given profits P. The first is the proportion of national income invested

$$\sigma \equiv I/Y \tag{3}$$

The second is the retention ratio r

$$r \equiv R/P \tag{4}$$

and the third is the fraction i in which investment is financed by issuing new shares instead of using retained earnings

$$i \equiv (I - R)/I \equiv (q\dot{A})/I \tag{5}$$

q represents the current share price and $\dot{A} \equiv dA/dt$ the number of shares issued per time period t.

Total savings are defined as

$$S \equiv S_w + R \tag{6}$$

i. e. as the sum of workers' savings S_w plus retained earnings R.

[3] *Kaldor* (1966) p. 311.

Workers' savings are explained in the Keynesian way. Workers are assumed to save a constant and equal proportion s_w out of their wage and dividend income. In addition, their saving behaviour is affected by alterations in the value of their accumulated wealth. It is assumed that workers consume a constant fraction $(1 - s_w)$ of their capital gains G enjoyed.

If capital gains are zero workers' savings are equal to $(s_w W + s_w D)$. Up to this amount they would like to purchase new shares. Buying shares is assumed to be the only form of placing savings. There are no financial institutions, like banks. When share prices rise and capital gains become positive workers consume the proportion $(1 - s_w)$ of these capital gains. They do this by dissaving, i. e. by selling shares up to $[(1 - s_w)G]$ per period. Actual workers' saving is equal to net saving, i. e. equal to saving out of income plus dissaving out of capital gains. We find

$$S_w = s_w W + s_w D - (1 - s_w) G \tag{7}$$

Furthermore, we have the definition of capital gains G

$$G \equiv \dot{q} A \qquad \text{where } \dot{q} \equiv dq/dt \tag{8}$$

which can be written as

$$G = vI - q\dot{A} = (v - i)\, I \tag{9}$$

This follows from the definition of the valuation ratio

$$v \equiv qA/K \tag{10}$$

which gives us an expression for q. The latter, after differentiating with respect to time, treating v as a parameter and taking account of (5) leads to (9).

The valuation ratio is an important concept in the present context. It represents the ratio of the value of the corporate sector as seen by the stock market to the value of the corporate sector as seen by the corporate sector itself. qA is the total number of shares multiplied by the current price of shares. qA is the result of financial transactions reflecting income- and capital gain-induced net demand for shares as well as investment-induced supply of shares.

K, the denominator of the valuation ratio is the value of the corporate sector as seen by itself. K can be interpreted as a close relative to the *Hicks*ian concepts of forward- and backward-looking measures of the value of capital[4].

[4] *Hicks* (1973), pp. 157 - 63.

J. Robinson pointed out already that in equilibrium forward- and backward-looking values of capital are equal[5]. In a profit-maximising system investment is carried out up to that level which leads to the equalisation of expected present values of investment net return and of investment cost. If we assume equilibrium in this sense K not only measures the backward-looking value of corporate assets but also the forward-looking value of the same assets.

We now proceed by stating the equilibrium conditions. We can formulate two of them, namely the usual IS-condition being the condition for circular flow equilibrium for the economy as a whole, and a less usual condition standing for equilibrium in the stock market.

Circular flow equilibrium requires

$$I = s_w Y + (1 - s_w) R - (1 - s_w)(v - i) I$$

or

$$gK = s_w Y + (1 - s_w) R - gK (1 - s_w)(v - i) \qquad \text{where } g \equiv I/K \tag{11}$$

The second condition states that in stock market equilibrium the total supply of shares — i. e. emissions of new shares by the corporate sector plus dissaving by workers to cash in on capital gains — must be equal to total demand for shares — i. e. workers' savings out of wages and dividend income. We have

$$iI + (1 - s_w)(v - i) I = s_w Y - s_w R$$

or

$$igK = s_w Y - s_w R - gK (1 - s_w)(v - i) \tag{12}$$

For the purposes of distributional analysis the dependent variable is the rate of profit $\varrho \equiv P/K$. The solution of the two equilibrium conditions yields

$$\varrho = \frac{g \varkappa [1 + (1 - s_w)(v - i)] - s_w}{r \varkappa (1 - s_w)} \tag{13}$$

where $\varkappa \equiv K/Y$

for circular flow or IS-equilibrium and

$$\varrho = \frac{- g \varkappa [i + (1 - s_w)(v - i)] + s_w}{r \varkappa s_w} \tag{14}$$

for stock market or AM-equilibrium.

[5] *J. Robinson* (1953 - 4), p. 51, writes: In equilibrium "... the rate of profit ruling today is the rate which was expected to rule today when the decision to invest in any capital good now extant was made, and the expected future receipts, capitalised at the current rate of profit, are equal to the cost of the capital goods which are expected to produce them".

General equilibrium requires the simultaneous fulfillment of (13) and (14).

This model seems to lead us somewhat into the neighbourhood of the familiar *Hicks-Hansen* IS-LM approach, but it has to be made clear that this is not really true. While the IS-equilibrium relation is very much akin to the *Hicks-Hansen* IS-relation, the AM-relation has not much in common with their LM-relation. Their LM-relation states the equilibrium properties of the money market and is therefore determined by money supply and demand for money for transaction and speculative purposes. Our AM-relation reflects the equilibrium in the stock market which is a market for property rights in a model ignoring money in the sense of an instrument useful for transaction purposes.

In what follows we are going to discuss alternative applications of the model presented so far. In (13) and (14) there are six potentially independent variables, i. e. g, $\varkappa$, s_w, i, r and v of which we have to assume five as constant in order to solve the two equations implying the general equilibrium values of ϱ and of the independent variable chosen. Not every selection made leads to the same theoretical insights. The selection is important and has to be properly defended by theoretical argument and — ultimately — empirical judgment.

3. The Kaldorian Solution

Kaldor, to whom the formal structure of the basic model discussed is due[6], suggests ϱ as dependent and v as independent variables and treats the rest as parameters[7].

The IS-relation (13) becomes

$$\varrho = \frac{g\varkappa\,[1 - i\,(1 - s_w)] - s_w}{r\varkappa\,(1 - s_w)} + \frac{g}{r}\,v \tag{15}$$

and the reformulated AM-relation is

$$\varrho = \frac{1 - g\varkappa i}{r\varkappa} - \frac{(1 - s_w)}{s_w}\,\frac{g}{r}\,v \tag{16}$$

The IS-relation (15) and the AM-relation (16) are represented graphically in *Figure 1.*

[6] *Kaldor* (1966) pp., 307 - 13.

[7] This procedure appears to be odd if we remember that the derivation of (9) which is incorporated in (15) as well as in (16) is based on the assumption of a constant v.

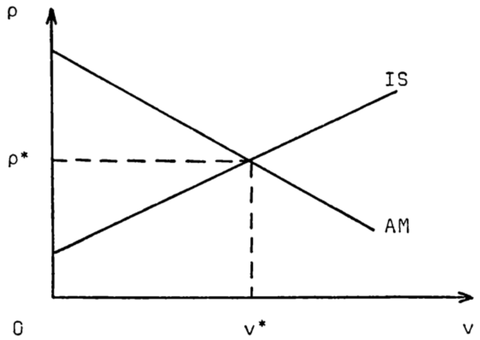

Figure 1

What is the economic justification for the positive slope of the IS-curve and of the negative slope of the AM-curve? Let us discuss the IS-relation first. If the valuation ratio rises, share holders are experiencing capital gains (see equation 9) and are, therefore, increasing their dissaving. This fall in workers' net saving can be compensated by a redistribution of income from wages to profits. If profits and hence ϱ increase, retained earnings are going up. This process only stops when total savings, i. e. personal savings by workers and savings in form of retained earnings by the corporate sector have reached the initial hight again.

In the stock market rising profits, i. e. rising ϱ, are destabilising. An increase in the valuation ratio leads to realisations of capital gains and to a supply of more shares. These additional shares can only be absorbed by additional savings out of workers' income. This means that wages must rise or that the profit rate ϱ must fall if v shall be able to stay at increased level.

The first requirement for an intersection of the IS- and the AM-relation in the positive range of v- and ϱ-values is

$$\frac{g \varkappa [1 - i(1 - s_w)] - s_w}{r \varkappa (1 - s_w)} < \frac{1 - g \varkappa}{g \varkappa}$$

which can be reduced to

$$g \varkappa \equiv \sigma < 1 \tag{17.1}$$

The second requirement is

$$-\frac{g \varkappa [1 - i(1 - s_w)] - s_w}{g \varkappa (1 - s_w)} < \frac{(1 - g \varkappa i) s_w}{g \varkappa (1 - s_w)}$$

This means that the IS-curve has to intersect the x-axis left from the intersection point of the AM-curve. This condition can be reduced to

$$i < 1 \tag{17.2}$$

By solving (15) and (16) simultaneously we reach the general equilibrium values

$$\varrho^* = \frac{g\,(1-i)}{r} \tag{18}$$

and

$$v^* = \frac{s_w}{1-s_w}\,\frac{1-g\,\varkappa}{g\,\varkappa} \tag{19}$$

These values are expressions of stable equilibrium. This can be made clear by introducing speculators and by describing the consequences of rising expectations in the stock market.

The speculators are adding shares to their stocks because they expect further price increases to occur. This bull market leads to capital gains and these imply an increase in ϱ in order to keep total savings at their initial level. But while this redistribution has secured IS-equilibrium the situation in the stock market becomes more and more desperate. A rising ϱ implies a reduction in workers' savings and hence in demand for shares and unless speculators are accelerating their own purchases of shares ($v > v^*$) cannot be kept for long. A look at (19) shows that only a rise in the workers' propensity to save and/or a decline in $\sigma = g\,\varkappa$, g and/or $\varkappa$ can ever justify the speculators' action.

The results (18) and (19) are given by *Kaldor* who calls (18) a Neo-*Pasinetti* Theorem[8]. This, it seems to us, is a kind of an exaggeration.

First of all, workers are the only shareholders apart from the quantitatively negligible speculators and although their saving propensity s_w does not show up in (18) their influence still matters insofar they are tolerating a certain value of the retention ratio r to be fixed by management. Secondly, we wonder what bearing this type of model could ever have on the controversy around the *Pasinetti* paradox. *Pasinetti* and Anti-*Pasinetti* results emerge in response to alternative steady state values of wealth distribution[9]. In the present model in the interpretation of which we have tried to stay as much as possible within the bounds of explicit theorising there is only one significant group of wealth owners: workers. However, we may still want to look for some kind of *Pasinetti* interpretation of (18). In this case we could thirdly point to the fact that

[8] *Kaldor* (1966), especially footnote 8, p. 311.
[9] See *Meade* (1963).

insofar as workers as shareholders do not control management action, i. e. the determination of the retention ratio r, the functional distribution of income is independent of workers' behaviour. But so far, the *Berle* and *Means* diagnosis of a separation of ownership from control cannot be more than what we may call one of the stylised facts of managerial economics[10].

The greatest difficulty in connection with the Kaldorian solution discussed so far is his use of the valuation ratio as an independent variable. To this we turn in the following paragraph.

4. The Doubtful Relevance of the Valuation Ratio as an Independent Variable

Kaldor is using the valuation ratio v as an independent variable in order to solve the basic model. Can this be justified on the basis of our interpretation of the valuation ratio? Can v vary freely or are there limits to be considered?

We think that there are limits and pretty severe ones even. Our argument goes as follows:

A changing value of v implies changing cost of investment finance. If we take (10) and express it in terms of proportionate rates of growth we find

$$\dot{v}/v = \dot{q}/q + \dot{A}/A - \dot{K}/K$$

If we accept the difference between growth in the number of shares ($\dot{A}/A$) and growth of assets ($\dot{K}/K$) as given, growth of the valuation ratio ($\dot{v}/v$) is in proportion to the growth of share price ($\dot{q}/q$).

A rising valuation ratio — based on rising share price — implies that the corporate sector has to sell less shares in order to finance the same amount of investment. Given a certain customary amount of dividends to be paid out per share the cost of investment finance is reduced. The opposite applies to a downturn of the valuation ratio.

Our interpretation of K, the denominator of v, carried the statement that the corporate sector is investing up to the point where the forward-looking value of its capital is equal to capital cost. This follows from the assumption of profit maximisation. Investment plans are in equilibrium only if forward- and backward-looking values of capital are equal. If the forward-looking value is greater than the backward-looking one, increased investment is profitable and *vice versa*. Investment in (3) has been assumed constant, i. e. constant at the prevailing forward- and backward-looking evaluations of capital by the corporate sector.

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[10] For a terse criticism of this stylised fact, see *Tullock* (1969).

Which is the relationship between the denominator K and the numerator qA in the valuation ratio? In equilibrium, K measures the forward-looking value of the corporate sector as well as the backward-looking value. The latter is equivalent to the cost of physical and immaterial assets in the corporate sector. The stock market value of the corporate sector is the financial counterpart to real capital cost K, i. e. its expression in terms of the value of all shares.

Strictly interpreted, capital cost and total share value must be equal in equilibrium. The value of all shares, being certificates over property rights in relation to the corporate sector, cannot differ much from the real value K of the corporate sector. Small divergencies are perhaps acceptable as the consequences of capital market imperfections. But however large a given gap between qA and K may be, it has to be expected to remain constant.

This constancy is secured by the following mechanism: If share value is rising at constant cost of corporate assets, investment becomes relatively cheap at a given forward-looking value of capital. Expected returns are in improved proportion to the value of the shares issued to finance investment at given capital cost. By increasing investment, i. e. by accelerating emissions of new shares, the corporate sector is benefiting from lower cost of financial resources. However, additional shares supplied to the stock market lead to a reduction of share price. The process stops when the valuation ratio is at its old level again.

In his paper *Kaldor* does not mention these influences on the long-term value of v although he speaks of (19) as expressing a Golden Age solution[11].

If what we said about the longer term determinants of the valuation ratio is accepted *Kaldor's* solution has to be rejected. v cannot properly be regarded as an independent variable. v has to be constant in the long-run and has to be close to one or equal to one. Long-run deviations ($v \neq 1$) can be interpreted as reflecting capital market imperfections.

Kaldor's solution can only be accepted for the short-run[12]. But the logical structure of the model can still be used to discuss the interrelationships between corporate finance, income distribution and growth. We only have to work out an alternative solution implying an alternative independent variable.

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[11] *Kaldor* (1966) p. 311.

[12] It is somewhat strange that *Kaldor,* who introduced explicit investment functions in his models explaining growth and distribution simultaneously — see (1957) and (1961 - 2) — did not dig deeper this time.

5. Alternative Solution

If we accept the criticism made we have to treat the valuation ratio as parameter in (13) and (14). If we take the capital coefficient $\varkappa$ as the obvious alternative independent variable we find from IS-relation (13)

$$\varrho = \frac{g\,[1 + (1 - s_w)\,(v - i)]}{r\,(1 - s_w)} - \frac{s_w}{r\,(1 - s_w)}\,\frac{1}{\varkappa} \tag{20}$$

and from AM-relation (14)

$$\varrho = - \frac{g\,[i + (1 - s_w)\,(v - i)]}{r\,s_w} + \frac{1}{r}\,\frac{1}{\varkappa} \tag{21}$$

The proportionate rate of corporate capital growth g can now be understood as being equal to the proportionate steady-state growth rate of output, i. e. the natural rate of growth. The interpretation of the other items remains unchanged.

The IS-relation (20) and the AM-relation (21) can again be represented graphically *(Figure 2)*.

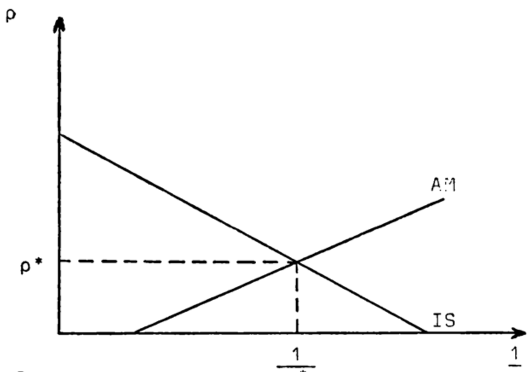

Figure 2

General equilibrium at positive values of $\varkappa$ and ϱ first requires

$$\frac{g\,[1 - (1 - s_w)\,(v - i)]}{r\,(1 - s_w)} > - \frac{g\,[i + (1 - s_w)\,(v - i)]}{r\,s_w}$$

or

$$\frac{s_w}{1 - s_w} > -1 \tag{22.1}$$

In addition, as before in the case of the Kaldorian solution, a condition

(22.2) $$i < 1$$

has to be satisfied as well.

The slopes of the two curves can be explained as follows: As long as IS-equilibrium shall prevail a rising rate of profit ϱ has to be accompanied by a rising capital coefficient $\varkappa$ or by a falling productivity of capital $(1/\varkappa)$. This is so because the higher ϱ the more will be saved. Increased savings (retained earnings) have to be matched by increased investment, i. e. by a rising $\varkappa$.

Increased investment, i. e. increased I/Y leads to a rising proportionate rate of capital growth. If we assume a natural rate of output growth which cannot be surpassed in the long-run the rate of capital growth is sooner or later declining again to its initial level. The only effect of such one time increase in I/Y is a higher level of the capital coefficient $\varkappa$.

The explanation of the slope of the AM-relation goes along similar lines. The higher ϱ the lower $\varkappa$ must be if equilibrium in the stock market shall be maintained. Higher ϱ means less wages and, therefore, less demand for shares. At the prevailing long-run valuation ratio a fall in share demand necessitates a fall in share supply or a fall in the number of shares emitted. This is possible by reducing investment and this brings a reduction in $\varkappa$.

By solving (20) and (21) simultaneously we reach the following general equilibrium values for ϱ and $\varkappa$:

(23) $$\varrho^* = \frac{g\,(1-i)}{r}$$

which is equal to (18) and

(24) $$\varkappa^* = \frac{s_w}{g\,[s_w + v\,(1-s_w)]}$$

By choosing $\varkappa$ as a variable we have in fact "endogenised" investment insofar as we are able to show in which direction the level of I/Y has to move in order to make general equilibrium possible. Our solution of the model suggests that investment has to adapt to saving and not saving to investment, as it is *Kaldor's* way to present the world.

We may further point to an implication following the simultaneous consideration of (23) and (24). Solving both for g and thereby eliminating g we find

(25) $$\varrho^* = \frac{s_w\,(1-i)}{r\;[s_w + v\,(1-s_w)]}\,\frac{1}{\varkappa^*}$$

with the property

$$\frac{d\,\varrho^*}{d\,\varkappa^*} = -\,s_w\,(1-i)\,r\,[s_w + v\,(1-s_w)] < 0 \tag{26}$$

(25) shows the equilibrium value of the rate of profit ϱ^* as a hyperbolic function of the capital coefficient. The slope of the function is given in (26).

Our alternative solution implies the monotonic and inverse relationship between ϱ and $\varkappa$ usually predicted by neoclassical economics. But here the prediction is not based on the controversial concept of the neoclassical production function[13]. This appears to be another case in which "neoclassical" predictions can be made without having recourse to the entire set of neoclassical tools[14].

If we assume perfect competition in the capital market, the valuation ratio is equal to one and (24) reduces to

$$\varkappa^* = \frac{s_w}{g} \tag{27}$$

which is, after all, our equivalent to *Harrod's* growth equation[15].

The share of profits is defined as $(P/Y) \equiv \varrho\varkappa$. Our results suggest the following equilibrium value of the distribution of factor incomes:

$$\left(\frac{P}{Y}\right)^* = \frac{s_w\,(1-i)}{r\,[s_w + v\,(1-s_w)]} \tag{28}$$

or, in case of $v = 1$

$$\left(\frac{P}{Y}\right)^* = \frac{s_w\,(1-i)}{r} \tag{29}$$

This is showing that equilibrium distribution of factor incomes depends on two factors only: the workers' propensity to save and the shareholders' control of corporate finance. The more workers save the more

[13] For a discussion of this subject-matter see *Pasinetti* (1974).

[14] With respect to *Kaldor's* well known formula explaining income distribution (*Kaldor* 1955 - 6) *C. C. von Weizsäcker* (1973) writes: "What does ... *Kaldor's* formula mean? A large difference in the savings propensity of capitalists and workers means a high elasticity of supply of capital with respect to the rate of return on capital: the higher the rate of profits, the higher is the income share of capitalists and the higher is the aggregate of supply of savings or capital." (Pp. 733 - 4.) — The Keynesian saving function, prescribed for each of the two income receiving classes, is superseded by a "neoclassical" profit elastic saving function for the economy as a whole.

[15] Note that when there are no profits retained ($r = 0$) equation (27) is even more akin to *Harrod's* equation because then s_w is not only standing for the workers' average propensity to save but also for the propensity to save of the economy as a whole. But then ϱ^* i. e. income distribution, is not determined anymore.

they demand shares in the stock market. This demand for additional shares can be satisfied by increasing investment (share emissions) and investment only increases if profits ϱ rise. Contrary results are following increase values of i or r.

The general equilibrium value of the share of income of the corporate sector (management) as opposed to workers is because of $R \equiv rP$ equal to

$$\left(\frac{R}{Y}\right)^* = \frac{s_w (1 - i)}{s_w + v (1 - s_w)} \tag{30}$$

or, for $v = 1$, equal to

$$\left(\frac{R}{Y}\right)^* = s_w (1 - i) \tag{31}$$

All the values are expressions of stable equilibrium. This is demonstrated by the following process description. If general equilibrium is disturbed and ($\varrho > \varrho^*$) the capital coefficient implying IS-equilibrium is higher than the one implying AM-equilibrium. If this rate of ϱ is maintained share emissions are much to great in relation to workers' demand for shares. This oversupply of shares tends to reduce share price, or, in other words, investment finance is becoming more expensive. The corporate sector revises its investment plans. Falling investment brings a falling capital coefficient. The process only stops when the actual rate of profit has returned to its initial general equilibrium level.

6. A Comment on Marris' Tentative Micro-Macro Model

In his "A Tentative Micro-Macro Model of the Growth of Firms and of the Economy", *Marris* (1972) relies heavily on a Kaldorian type of solution.

In *Marris'* theory of firm growth the valuation ratio plays an important rôle in the explanation of individual firm growth. It is the valuation ratio that enters both the utility functions of firm management and shareholders and it is the trade-off between valuation ratio and proportionate growth rate of the firm — reflecting stock market reaction to the firm's growth and its financement as well as the cost of firm growth — which represents the constraint which has to be considered by management when it maximises its utility function incorporating the same arguments, valuation and growth[16]. It is, therefore, only natural that *Marris* writes "... that *Kaldor's* valuation theorem [see our equation 19; *N. B.*] represented an important break through in the task

[16] For a very short introduction, see *Wildsmith* (1973) pp. 84 - 124.

of reconciling theories of the growth of the firm with theories of economic growth generally and vice versa"[17].

Keeping to our criticism of *Kaldor's* solution *Marris'* hopes look somehow shattered. We have said that in a macroeconomic model aiming at the explanation of long-run development the valuation ratio cannot be regarded as an independent variable unless we accept a long-run independence of finance demand (investment) from finance supply conditions. Consequently, the valuation ratio is reduced to a parameter of which the long-run divergence from one could at best be interpreted as indicating capital market imperfections.

If we deny acceptability to the valuation ratio as an independent variable in a long-run macro model, we certainly cannot accept it in a micro model of the *Marris* type. Our basically microeconomic interpretation of the valuation ratio suggests that it is an indicator of the cost of investment finance. This view is not incorporated in the *Marris* type of models.

There, growth is the dominant objective of firms and stock market valuation is not understood as an indicator of the cost of finance and is, therefore, not directly relevant to investment decisions. The only influence stock market valuation has on management decisions works through things like the threat of take-over raids. The valuation ratio thus is an independent but constrained variable. For the individual firm there is a value $\bar{v}_j$ at which the risk of "take-over or other cause of dismissal"[18] is prohibitive in the eyes of management. As long as this value is not attained management is free to select any proportionate rate of firm growth existing in the above mentioned trade-off relation.

In terms of a macro model one may wonder whether the constraint $v_j \geq \bar{v}_j$ has to be dropped. If the valuation ratio is the average valuation ratio of all firms why should there be a threshold value at which take-over bidding starts? If the average valuation ratio comes down very low the average firm is very lowly valued and does not do better than any other firm near to the average. If all the firms are valued pretty close to the average level there is not much scope for profitable take-over bidding and the constraint on the valuation ratio disappears. This would suggest that — disregarding *Kaldor's* macro valuation theorem (our equation 19) for the moment being — the best managerial solution would be one in which the average growth rate was a maximum at an average valuation ratio of $v = 0$. If there were not *Kaldor's* circular flow reasons for a positive valuation ratio nothing could actually prevent this improbable outcome to become true.

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[17] *Marris* (1972), p. 339.
[18] *Marris* (1972), p. 345 f.

7. Conclusions

We feel that there are implications of the *Marris* type of theories of micro as well as of micro-macro growth and distribution that suggest the necessity to review the use made of the concept of the valuation ratio. Certainly more weight has to be placed on the valuation ratio as indicating the cost of finance. This could be done by incorporating an explicit investment function into the models of the theory of managerial economics.

The distributional results worked out above — see equations (23) - (29) — point to the importance of two things: Of some importance is the knowledge of the actual value of the valuation ratio. Of overriding importance, however, is the understanding of the processes at work when the corporations fix their financial policies (r and i). Is ownership really separated from control and if so, how does this affect corporate finance and, hence — along the lines discussed —, distribution?

Summary

Within a framework formulated by *Kaldor* the effects of corporate finance on income distribution are investigated. The discussion shows the importance of the assumptions on the working of the capital market. The determination of the ratio of the share value to the value of real capital of the corporate sector is crucial. Considerably different interpretations of the model follow from treating this ratio either as an endogenous variable or as a parameter. The results also highlight the importance of the alleged separation of ownership from control. If this separation affects corporate finance it also influences income distribution.

Zusammenfassung

Die Verteilungswirkungen der unternehmerischen Selbstfinanzierung werden im Rahmen eines von *Kaldor* formulierten Modells untersucht. Dabei wird die Wichtigkeit der Annahmen über die Funktionsweise des Kapitalmarktes deutlich. Die Bestimmung des Verhältnisses zwischen dem Aktienwert und dem Realkapitalwert des Unternehmenssektors ist dabei entscheidend. Es ergeben sich ganz unterschiedliche Interpretationen, je nach dem ob dieses Verhältnis endogen erklärt oder als Parameter vorgegeben wird. Die Ergebnisse zeigen daneben die Bedeutung der Behauptung von der Trennung von Eigentum und Kontrolle. Falls die Trennung die Selbstfinanzierung tangiert, beeinflußt sie auch die Einkommensverteilung.

Literature

Bombach, G. (1959 a), Preisstabilität, wirtschaftliches Wachstum und Einkommensverteilung, Schweizerische Zeitschrift für Volkswirtschaft und Statistik 95 (1959).

Bombach, G. (1959 b), Die verschiedenen Ansätze der Verteilungstheorie, in: Schneider, E. (ed.), Einkommensverteilung und technischer Fortschritt, Berlin 1959.

Hicks, J. R. (1973), Capital and Time. A Neo-Austrian Theory, Oxford 1973.

Kaldor, N. (1955 - 6), Alternative Theories of Income Distribution, Review of Economic Studies 23 (1955 - 6).

— (1957), A Model of Economic Growth, Economic Journal 67 (1957).

— (1966), Marginal Productivity and Macroeconomic Theories of Distribution, Review of Economic Studies 33 (1966) (cited according to reprint in: Harcourt, G. C., and N. F. Laing (eds.), Capital and Growth, Harmondsworth, Baltimore, Ringwood 1971).

Kaldor, N., and *J. A. Mirrlees* (1961 - 2), A New Model of Economic Growth, Review of Economic Studies 29 (1961 - 2).

Marris, R. (1972), Why Economics Needs a Theory of the Firm, Economic Journal 82 (1972), pp. 341 - 352.

Meade, J. E. (1963), The Rate of Profit in a Growing Economy, Economic Journal 73 (1963).

Pasinetti, L. L. (1974), The Rate of Profit in an Expanding Economy, in: Pasinetti, L. L., Growth and Income Distribution — Essays in Economic Theory, Cambridge 1974.

Robinson, J. (1953 - 4), The Production Function and the Theory of Capital, Review of Economic Studies 21 (1953 - 4) (cited according to reprint in: Harcourt, G. C. and N. F. Laing (eds.), Capital and Growth, Harmondsworth, Baltimore, Ringwood 1971).

Tullock, G. (1969), The New Theories of Corporations, in: Streissler, E. (ed.), Road to Freedom — Essays in Honour of F. A. von Hayek, London 1969.

Weizsäcker, C. C. von (1974), Substitution Along the Time Axis, Kyklos 27 (1974).

Wildsmith, J. R. (1973), Managerial Theories of the Firm, London 1973.